

ADDENDUM TO "A STUDY OF MARTIAN YELLOW CLOUDS THAT DISPLAY MOVEMENT"

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In my paper [1] of the above title, I referred to a preliminary draft of "Notes on Martian Yellow Clouds," by J. A. Ryan. This important paper has now been published [2]. Ryan's paper contains a quite extensive treatment of the mechanics of sand and dust pick-up from Mars' surface, a subject that I also discussed more briefly. Ryan correctly points out that I used the critical Reynolds number for transition from smooth to turbulent flow around sand grains, $Re=3.5$, to calculate the threshold friction velocity, v_* , for the initiation of sand motion, namely $Re=v_*d/\nu$, equation (2) in my paper. I should point out that the actual value of Re used doesn't alter the numerical values arrived at, and is not an essential assumption. What is essential is that, because of similarity of the two phenomena, particle motion at Mars' surface and the earth's will just begin at values of v_* such that the applicable critical Reynolds number for

this phenomenon (whatever value this may take) will be the same. Thus the actual value of Re at which the threshold v_* value for sand motion occurs does not matter, and in particular it need not equal the value 3.5. Consequently equations (4) and (5) from my paper essentially agree with the threshold values of v_* and grain diameter, d , given in Ryan's figure 2, i.e., the minima of his curves. This fact may not be evident from a cursory comparison of the results of these two papers.

REFERENCES

1. F. A. Gifford, "A Study of Martian Yellow Clouds That Display Movement," *Monthly Weather Review*, vol. 92, No. 10, Oct. 1964, pp. 435-440.
2. J. A. Ryan, "Notes on the Martian Yellow Clouds," *Journal of Geophysical Research*, vol. 69, No. 18, Sept. 15, 1964, pp. 3759-3770.

[Received October 14, 1964]

CORRECTION

vol. 92, No. 8, p. 380: The time of the fall of hailstones in central Montana should be 1900 MST (7 p.m.), not 0700 MST.